

ONTARIO MINISTRY OF ENVIRONMENT



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information on courses workshops & seminars

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Ontario

Ministry
of the
Environment

The Honourable
George A. Kerr, Q.C.,
Minister

Everett Biggs,
Deputy Minister

MINISTRY OF THE ENVIRONMENT

TECHNICAL TRAINING PROGRAM

1976-1977

Preface

The responsibilities of the Training and Certification Section, Personnel Services Branch, Ontario Ministry of the Environment, include the development and conduct of training and certification programs for personnel engaged in the protection and upgrading of the natural environment. By working in close co-operation with professional, industrial and government organizations, programs are designed to meet the needs of Ministry and non-Ministry staffs. As additional requirements are identified, new programs will be developed.


Information not included in the brochure may be obtained from:

Registration Secretary
Training and Certification Section
Personnel Services Branch
135 St. Clair Avenue West
TORONTO, Ontario M4V 1P5

Telephone: (416) 965-6994



Environment Ontario
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Etobicoke, Ontario M9P 3V6
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TRAINING PHILOSOPHY

1. In general, programs employ the Behavioural Objective Approach to Training (BOAT). A training manual, prepared for each course or workshop, as a reference text, provides information on the topics and lists objectives which tell the trainee what he must know and do to successfully complete the course. At the same time it reminds the instructor what he must teach, describe or demonstrate so that the performance of the trainee meets the required standards. To verify successful completion, both practical (hands-on) and written tests are administered to the trainees.
2. Instructors are for the most part drawn from Ministry staff and have usually been involved in developing material for the courses and workshops. As part of their normal work they are usually also responsible for providing advice, guidance and practical assistance to the operational staff, so they understand the day-to-day problems faced in the field. Based on this knowledge and background, the instructor can deal with any relevant questions raised during the course or workshop. Furthermore, he is identified to the trainee as a point of contact for advice on problems which might arise.

SCOPE OF PROGRAM

3. Courses, workshops and seminars are offered annually, with most being scheduled between September and May. A course consists of lecture and discussion periods interspersed with audio-visual presentations and other demonstrations. A workshop is a course which includes substantial "hands-on" participation, during which the trainee receives practical training and errors are corrected as they occur.
4. Training programs offered by this Ministry and described in the attached Appendices are listed below:

- Appendix 1. Basic Sewage Treatment Operation Course
- 2. Basic Water Treatment Operation Course
- 3. Activated Sludge Workshop

4. Basic Gas Chlorination Workshop
5. Surface Water Treatment Workshop
6. Maintenance Gas Fitters Certificate Course
7. Primary Treatment and Digestion Workshop
8. Preventive Maintenance Workshop
9. Safety in Water & Wastewater Operations
10. Pump Operation Workshop
11. Industrial Abatement-Air Management
12. Visible Emissions Identification Certificate Course
13. Acoustic Technology Certificate Course
14. Acoustic Technology in Land Use Planning
15. Deleted
16. Sewer and Watermain Design Course
17. Sewer and Watermain Construction Inspectors Course No. 1
18. Sewer and Watermain Construction Inspectors Course No. 2

5. A course calendar is at Appendix 19 and the program schedule is at Appendix 20.

6. Prerequisites

- (a) *Certain courses, because of prerequisites and/or course design, are restricted to specific groups. Courses annotated "MOE only" are available to Ministry staff other than plant operators; "Operators only" restricts these courses to water and wastewater treatment plant operators, either Ministry or non-Ministry; "non-MOE" restricts the course to non-Ministry personnel. If no restriction is shown, anyone with the proper prerequisites may make application.*
- (b) Where prerequisites have been specified for a course, employers must ensure that course candidates meet these requirements. If a candidate lacking the prerequisites arrives to attend a course, he may not be accepted.

7. Course Capacity

The capacity of each course, workshop and seminar is shown on the program schedule. If a course is over-subscribed, selection of candidates will be made by the Section and employers advised.

APPLICATION PROCEDURES

8. An application must be submitted by letter:

- (a) For a Ministry employee, from a Regional Director, a Regional Manager, or a Branch Director.
- (b) For a non-Ministry employee, from the individual's employer.

9. The following information must be included:

- (a) Course and date. An acceptable alternate, if available, should be shown.
- (b) Full name of applicant and home address.
- (c) Job title, address of employment and department or office.

10. Registration Fee

The required registration fee for each course is stated in the appropriate appendix. Ministry employees may pay the fee on registration. Registration fees must accompany the applications of non-Ministry applicants,
and

- (a) For all courses except MEA/MOE co-sponsored courses (Appendices 16, 17 and 18), the cheque or money order must be made payable to Training and Certification Section.
- (b) For MEA/MOE co-sponsored courses (Appendices 16, 17 and 18), the cheque or money order must be made payable to Municipal Engineers Association of Ontario.

11. An application (and registration fee, if applicable) will be forwarded to the Registration Secretary at the address shown in the Preface and will only be accepted prior to the date shown on the course schedule and summarized below:

October Courses	-	August 15
November Courses	-	September 15
December Courses	-	October 15
January Courses	-	November 15
February Courses	-	December 15
March Courses	-	January 15
April Courses	-	February 15

12. As soon as possible after the closing date, the individual's employer will be notified of the acceptance or rejection of the application. If the course of first choice is oversubscribed and an alternate has been shown on the application, the nominee will be listed for the alternative course, subject to confirmation by the employer.
13. Prior to a course, an information package will normally be forwarded to each applicant. This will include general course information, a sketch map showing course location and, in most cases, reference material for pre-course study.

14. Pre-Course Study

Pre-course study is required for many of the courses. *It is essential that employers encourage applicants to review the material provided for that purpose.* Employers should also ensure that applicants have some knowledge of the operations which will be dealt with on the course. For certain courses, the applicant will be required to submit solutions to problems forwarded with study material. While these do NOT count towards the individual's final mark, they may be a consideration in the case of a marginal failure.

15. Course Completion

The appropriate appendix shows the minimum average to be attained for successful completion of the course. A candidate's results will be forwarded to his employer, who is responsible for informing the individual.

GENERAL INFORMATION

16. Any requests for any information, including the status of an application or the availability of space on a course, will be directed to the Registration Secretary - Telephone (416) 965-6994.

17. Training Facilities

- (a) These are located at the Ontario Experimental Facility, Brampton, the Ministry building at 4375 Chesswood Drive in Downsview, or the Ministry Laboratory, Resources Road, near the intersection of Islington Avenue and Highway 401. The sketch map at Appendix 21 shows these locations.
- (b) Training conducted outside of Toronto will be held in suitable accommodation obtained specifically for the session.

18. Transportation and Accommodation

- (a) These arrangements, including reservations, are the responsibility of the trainee. The sketch maps indicate motels and hotels which are within reasonable proximity to the training facilities. A list of hotels with approximate room costs is at Appendix 22.
- (b) Employers must ensure that trainees on arrival at the course location are in possession of sufficient funds to meet anticipated expenses, including the registration fee if not previously paid.

19. Dress and Deportment

- (a) While only casual dress is required, trainees should maintain a neat and clean appearance. Laboratory coats will be provided on workshops to protect personal clothing.
- (b) So that the course timetable may be adhered to, trainees must be on time throughout the training session. Tardiness and/or absence by an individual will be reported to his employer.
- (c) Name tags to be provided to trainees will be worn at all times.

COURSE DESCRIPTIONBASIC SEWAGE TREATMENT OPERATION COURSE*PURPOSE:*

The Basic Sewage Treatment Operation Course is designed primarily for operators in training and to increase on-the-job efficiency of wastewater treatment plant operators. The program stresses "the need to know" rather than the "nice to know" of all processes associated with wastewater treatment. This course is a prerequisite to the Activated Sludge Workshop, the Primary Treatment and Digestion Workshop, the Preventive Maintenance Workshop and the Pump Operation Workshop.

SCOPE:

The course covers the following topics:

- A. SEWAGE CHARACTERISTICS
- B. MICROBIOLOGY OF SEWAGE
- C. PRIMARY TREATMENT
- D. BASIC CONSIDERATIONS OF THE ACTIVATED SLUDGE PROCESS AND VARIATIONS
- E. DIGESTION OF SLUDGE
- F. SLUDGE HANDLING
- G. INDUSTRIAL WASTE
- H. CHLORINATION OF SEWAGE
- I. RECORDS AND BASIC LABORATORY TESTS
- J. PRACTICAL MATHEMATICS
- K. PLANT MAINTENANCE, SAFETY AND SAFETY INSPECTIONS

*PRE-COURSE**FAMILIARIZATION:*

Pre-course study material will be provided. When preparing to attend this course, an applicant must:

- (a) Review the Ministry course manual, Basic Sewage Treatment Operation;
- (b) Review the Ministry manual, Mathematics for Water and Sewage Operators;
- (c) Familiarize himself with the operations dealt with on the course.

PREREQUISITES:

None, but preference will be given to personnel engaged in the operation of wastewater treatment plants.

PASSING GRADE:

70%

REGISTRATION FEE: \$20 payable to "Training and Certification Section".

COURSE DESCRIPTIONBASIC WATER TREATMENT OPERATION COURSE*PURPOSE:*

The Basic Water Treatment Operation Course is designed primarily for operators in training and to increase on-the-job efficiency of water treatment plant operators. The program stresses "the need to know" rather than the "nice to know" of all processes associated with water treatment. This course is a prerequisite to the Surface Water Treatment Workshop, the Preventive Maintenance Workshop and the Pump Operation Workshop.

SCOPE:

The Course covers the following topics:

- A. WATER QUALITY OBJECTIVES AND PUBLIC HEALTH SIGNIFICANCE
- B. GROUNDWATER SUPPLIES
- C. COAGULATION, FLOCCULATION AND SEDIMENTATION
- D. WATER FILTRATION
- E. MAINTENANCE
- F. CHLORINATION
- G. WATER BACTERIOLOGY
- H. SAFETY AND SAFETY INSPECTIONS
- I. PRACTICAL MATHEMATICS
- J. RECORDS
- K. CARE, MAINTENANCE AND OPERATION OF A DISTRIBUTION SYSTEM

*PRE-COURSE
FAMILIARIZATION:*

Pre-course study material will be provided. When preparing to attend this course, an applicant must:

- (a) Review the Ministry course manual, Basic Water Treatment Operation;
- (b) Review the Ministry manual, Mathematics for Water and Sewage Operators;
- (c) Familiarize himself with the operations dealt with on the course.

PREREQUISITES:

None, but preference will be given to personnel engaged in the operation of water treatment plants.

PASSING GRADE:

70 percent.

REGISTRATION FEE: \$20 payable to "Training and Certification Section".

COURSE DESCRIPTIONACTIVATED SLUDGE WORKSHOP*PURPOSE:*

This workshop is designed to increase on-the-job efficiency of activated sludge treatment plant operators at all levels of responsibility. By emphasizing methods of process control it is specifically directed at an operator employed as, or likely to be promoted to, shift foreman, operator-in-charge or chief operator of an activated sludge plant.

SCOPE:

The workshop which includes considerable "hands-on" participation covers the following:

- A. ACTIVATED SLUDGE - GENERAL CONSIDERATIONS
- B. MICROSCOPIC EXAMINATION OF ACTIVATED SLUDGE
- C. DISSOLVED OXYGEN TESTS AND REQUIREMENTS
- D. SAMPLING
- E. INTERPRETATION OF ANALYTICAL RESULTS
- F. pH MEASUREMENT USING ELECTROMETRIC METHOD
- G. SETTLING TEST
- H. SUSPENDED AND VOLATILE SUSPENDED SOLIDS
- I. TOTAL SOLIDS AND TOTAL VOLATILE SOLIDS
- J. BOD TEST
- K. PHOSPHOROUS DETERMINATION

*PRE-COURSE
FAMILIARIZATION:*

Precourse study material will be provided. When preparing to attend this workshop an applicant must:

- (a) Review the Ministry course manual, Activated Sludge Process;
- (b) Review the Ministry manual, Mathematics for Water and Sewage Operators;
- (c) Familiarize himself with the operations dealt with on the course.

PREREQUISITES:

It is essential that the applicant has successfully completed the -

- (a) OWRC Basic, Intermediate and Senior Courses for Sewage Works Operators
or
- (b) Ministry of the Environment Introduction to Waste Treatment Course
or
- (c) Ministry of the Environment Basic Sewage Treatment Operation Course
or
- (d) Ministry of the Environment Basic Water/Sewage Treatment Operation Course.

PASSING GRADE:

70 per cent

REGISTRATION FEE:

\$20 payable to "Training and Certification Section".

COURSE DESCRIPTION

BASIC GAS CHLORINATION WORKSHOP

PURPOSE:

The Basic Gas Chlorination Workshop is designed to familiarize the new or inexperienced operator with the operation of various types of chlorination equipment, as well as demonstrate methods of trouble shooting defective units.

SCOPE:

The Workshop which includes considerable "hands-on" participation covers the following topics:

- A. PURPOSES OF CHLORINATION AND QUALITY CONTROL
- B. TYPES OF CHLORINE FEEDERS AND THEIR USAGE
- C. CONTROL SYSTEMS
- D. PROPERTIES AND PHYSIOLOGICAL EFFECTS OF CHLORINE
- E. STORAGE AND HANDLING OF CHLORINE GAS CYLINDERS
- F. SAFETY AND SAFETY INSPECTIONS
- G. CHLORINATION EQUIPMENT & COMPONENTS
- H. START-UP & SHUT-DOWN PROCEDURES
- I. GENERAL MAINTENANCE
- J. TROUBLE SHOOTING
- K. CHLORINATION LABORATORY TESTS

*PRE-COURSE
FAMILIARIZATION:*

Pre-course study material, including the Basic Gas Chlorination manual, will be provided.

PREREQUISITES:

None, but preference will be given to water and wastewater treatment plant personnel, operators of chlorination equipment used in industries as well as at recreational facilities.

PASSING GRADE:

70%

REGISTRATION FEE:

\$20.00 payable to "Training and Certification Section".

COURSE DESCRIPTIONSURFACE WATER TREATMENT WORKSHOP*PURPOSE:*

The Surface Water Treatment Workshop is designed to increase the knowledge of experienced water treatment plant operators. It is specifically directed at an operator employed as, or likely to be promoted to, shift foreman, operator-in-charge or chief operator of a water treatment plant.

SCOPE:

The workshop which includes considerable "hands-on" participation covers the following topics:

- A. BASIC WATER CHEMISTRY
- B. COAGULATION
- C. FILTRATION
- D. CHEMICAL DOSAGES
- E. TASTE & ODOUR CONTROL
- F. LABORATORY ANALYSES
- G. MICROBIOLOGICAL CONSIDERATIONS

PRE-COURSE FAMILIARIZATION:

Pre-course study material will be provided. When preparing to attend this workshop an applicant must:

- (a) Review the Ministry course manual, Surface Water Treatment;
- (b) Review the Ministry manual, Mathematics for Water and Sewage Operators;
- (c) Familiarize himself with the operations dealt with on the course.

PREREQUISITES:

It is essential that the applicant has successfully completed the -

- (a) OWRC Basic, Intermediate & Senior Courses for Water Works Operators
- or
- (b) Ministry of the Environment Introduction to Water Treatment Course
- or
- (c) Ministry of the Environment Basic Water Treatment Operation Course
- or
- (d) Ministry of the Environment Basic Water/Sewage Treatment Operation Course.

PASSING GRADE:

70 per cent

REGISTRATION FEE:

\$20 payable to "Training and Certification Section".

COURSE DESCRIPTION

MAINTENANCE GAS FITTERS CERTIFICATE COURSE

PURPOSE:

As required by the Energy Act 1971 and related Regulations, the Maintenance Gas Fitters Certificate Course is designed to certify personnel who operate and maintain the gas system in a wastewater treatment plant.

SCOPE:

The course covers the following topics:

- A. *DIGESTER MAINTENANCE*
- B. *DIGESTER GAS TRANSMISSION LINES*
- C. *CONTROL AND SAFETY EQUIPMENT*
- D. *BOILER AND BOILER CONTROL TRAIN*

PRE-COURSE

FAMILIARIZATION:

Pre-study material will be provided. When preparing to attend this course, an applicant should familiarize himself with the operations dealt with on the course, and

- (a) review the Gas Utilization Code Book, Regulations 254 and Regulation 255 Propane
- (b) review the Interim Safety Requirements (ISR)105
- (c) review the Installation Code for Oil Burning Equipment CBA Standard B139-71.

PREREQUISITES:

The applicant must be employed in the operation and maintenance of the gas system in a wastewater treatment plant.

PASSING GRADE:

A passing grade of 75 per cent must be attained on a final test administered by the Energy Safety Branch of the Ministry of Consumer and Commercial Relations.

REGISTRATION FEE:

\$20.00 payable to "Training and Certification Section".

COURSE DESCRIPTIONPRIMARY TREATMENT AND DIGESTION WORKSHOP*PURPOSE:*

The Primary Treatment and Digestion Workshop is designed to increase the knowledge of primary wastewater treatment plant operators. It is specifically directed at an operator employed as, or likely to be promoted to, shift foreman, operator-in-charge or chief operator of a primary treatment plant.

SCOPE:

The course covers the following topics:

- A. RAW SEWAGE CHARACTERISTICS
- B. PUMPING STATIONS & STANDBY POWER
- C. PRETREATMENT WORKS
- D. PRIMARY SEDIMENTATION
- E. DISINFECTION
- F. LABORATORY ANALYSES
- G. ANAEROBIC AND AEROBIC DIGESTION - THEORY
- OPERATION & CONTROLS
- PROBLEMS
- H. SLUDGE PROCESSING

PRE-COURSE FAMILIARIZATION:

Pre-course study material will be provided. When preparing to attend this workshop, the applicant should:

- (a) review the Primary Treatment and Digestion manual.
- (b) review basic arithmetic (addition, multiplication, division, subtraction, percentages and decimals) at the Grade VIII level.
- (c) familiarize himself with the operations dealt with on the course.

PREREQUISITES:

Basic Sewage Treatment Operation Course.

PASSING GRADE:

70 percent.

REGISTRATION FEE:

\$20.00 payable to "Training and Certification Section".

COURSE DESCRIPTIONPREVENTIVE MAINTENANCE WORKSHOP*PURPOSE:*

The Preventive Maintenance Workshop is designed to increase the knowledge and on-the-job efficiency of those employed in operating and maintaining water and wastewater treatment plants. It will teach the trainee good maintenance practices and demonstrate why a good maintenance program is a necessity to maintain efficient operation of the plant and achieve peak performance.

SCOPE:

The Workshop which includes "hands-on" participation covers the following topics:

- A. PREVENTIVE MAINTENANCE PROGRAM
- B. PHYSICAL MAINTENANCE - BUILDINGS, PLANT TANKS & CHANNELS, GROUNDS
- C. MECHANICAL MAINTENANCE
- D. FLOW MEASURING DEVICES

*PRE-COURSE**FAMILIARIZATION:*

Pre-course study material, including a Preventive Maintenance Workshop manual, will be provided. When preparing to attend this workshop, an applicant should familiarize himself with the operations described in the manual.

PREREQUISITES:

Successful completion of:

- (a) OWRC Basic, Intermediate and Senior Courses for Sewage Works/Water Works
- or
- (b) Ministry of the Environment Introduction to Waste Treatment/Water Treatment
- or
- (c) Ministry of the Environment Basic Sewage Treatment Operation/Water Treatment Operation

PASSING GRADE:

70 per cent

REGISTRATION FEE

\$20.00 payable to "Training and Certification Section"

COURSE DESCRIPTIONSAFETY IN WATER AND WASTEWATER OPERATIONS*PURPOSE:*

This course was jointly developed by a Sub-Committee of Municipal Engineers Association and Ministry of the Environment. It is designed to train both water and wastewater operations personnel in accepted safety practices in the handling of the safety equipment and responding to emergencies and rescue.

SCOPE:

The training will consist of lectures, demonstrations and "hands-on" in the following topics:

- A. *RESPONSIBILITIES FOR SAFETY*
- B. *SAFETY PRACTICES IN -*
 - 1) *Wastewater collection system*
 - 2) *Water distribution system*
 - 3) *Wastewater treatment system .*
 - 4) *Water treatment system*
- C. *HANDLING OF CHEMICALS*
- D. *METHANE GAS UTILIZATION*
- E. *EMERGENCY AND RESCUE PROCEDURES*

*PRE-COURSE**FAMILIARIZATION:*

Pre-course study material will be provided. When preparing to attend the workshop, an applicant must:

- (a) Review the course manual, Safety in Water and Wastewater Operations;
- (b) Review the applicable regulations under the Industrial Safety Act of Ontario;
- (c) Familiarize himself with the safety emergency equipment provided in his utility.

PREREQUISITES:

Candidate must be actively engaged in water or wastewater operations.

PASSING GRADE:

70 per cent

REGISTRATION FEE:

\$20 payable to "Training and Certification Section"

COURSE DESCRIPTIONPUMP OPERATION WORKSHOP*PURPOSE:*

This workshop, developed jointly with the Ontario Municipal Engineers' Association, is designed to increase the knowledge and skills of personnel involved in operating and maintaining all forms of pumping and allied equipment.

SCOPE:

The Workshop which includes considerable 'hands-on' participation covers the following:

- A. CHARACTERISTICS OF MATERIALS PUMPED
- B. PUMPING THEORY (HYDRAULICS & ENERGY)
- C. TYPES OF PUMPS
- D. POSITIVE DISPLACEMENT PUMPS
- E. CENTRIFUGAL PUMPS
- F. CONTROLS (PUMP APPLICATION PROCESS REQUIREMENT)
- G. VALVES
- H. MOTORS
- I. SAFETY
- J. FIELD TRIP TO A PUMP TESTING FACILITY.

*PRE-COURSE**FAMILIARIZATION:*

Precourse study material will be provided. When preparing to attend this workshop an applicant must:

- (a) Review the Pump Operation workshop manual
- (b) Review the Ministry manual Mathematics for Water and Sewage Operators
- (c) Familiarize himself with the operations dealt with on the course.

PREREQUISITES:

This workshop is an extension of training for water and wastewater treatment operation personnel. Therefore it is essential that the applicant has successfully completed the -

Basic Water or Sewage Treatment Operation Course conducted by the Ministry of the Environment or an equivalent course conducted by another authority.

PASSING GRADE:

70 per cent

REGISTRATION FEE:

\$20 payable to "Training and Certification Section".

COURSE DESCRIPTION

INDUSTRIAL ABATEMENT-AIR MANAGEMENT COURSE

PURPOSE:

The Industrial Abatement-Air Management Course consists of three parts. It is designed to familiarize new personnel with the air management aspect of Industrial Abatement, and to increase the efficiency of provincial officers involved with those duties.

SCOPE:

Part I:

- A. INTRODUCTION TO AIR MANAGEMENT: FEDERAL JURISDICTION
- B. EFFECTS OF AIR POLLUTION
- C. FUELS; COMBUSTION; BOILERS; INCINERATION

Part II:

- A. METEOROLOGICAL ASPECTS AND MEASUREMENT OF AIR POLLUTION
- B. AIR CONTAMINANT DEPOSITS; ODOURS
- C. ENVIRONMENTAL OFFICERS' DUTIES; REPORTS

Part III:

- A. INDUSTRIAL PROCESSES; SEWAGE TREATMENT
- B. CONCEPTS OF INDUSTRIAL AIR POLLUTION CONTROL
- C. CONTROL EQUIPMENT

PRE-COURSE

FAMILIARIZATION:

Pre-course study material including a manual will be provided. When preparing to attend any part of this course an applicant must study the training manual.

PREREQUISITES:

An applicant must be a provincial officer responsible for functions related to the air management aspects of the Ministry of the Environment's program.

There is no prerequisite that one part of the course be taken before another, but it is strongly recommended that applicants who are new to this field take Part I first.

PASSING GRADE:

Those trainees who achieve passing grades (60 per cent) for all three parts of the course will be awarded a certificate.

REGISTRATION FEE:

\$20 payable to "Training and Certification Section".

COURSE DESCRIPTION

VISIBLE EMISSIONS IDENTIFICATION CERTIFICATE COURSE

PURPOSE:

The Visible Emissions Identification Certificate Course is designed to train Ministry personnel and certify them as being proficient in the identification of the opacities of visible emissions. It will also help to prepare the provincial officer for appearance in court as an expert witness. The course is a combination of lecture and demonstration, with practice.

SCOPE:

The course covers the following topics:

- A. VISIBLE EMISSIONS - THEIR CAUSE AND REGULATION
- B. CLASSIFICATION AND IDENTIFICATION OF SOURCES
- C. PRINCIPLES OF COMBUSTION
- D. METEOROLOGICAL FACTORS IN READING OF VISIBLE EMISSIONS
- E. LEGAL ASPECTS AND COURTROOM APPEARANCES
- F. PRACTICE IN IDENTIFICATION OF OPACITIES OF VISIBLE EMISSIONS

PRE-COURSE

FAMILIARIZATION:

When preparing to attend this course the applicant should read in advance the Visible Emissions Identification Manual, which will be sent out with pre-course material.

PREREQUISITE:

An applicant for certification must be a provincial officer of the Ministry of the Environment.

PASSING GRADE:

- (i) 70 per cent (theoretical instruction)
- (ii) identification of the opacity of a set number of consecutive visible emissions within the permitted deviation standards.

REGISTRATION FEE:

None.

COURSE DESCRIPTIONACOUSTIC TECHNOLOGY CERTIFICATE COURSE*PURPOSE:*

The Acoustic Technology Certificate Course consists of four parts. It is designed to familiarize personnel with the techniques of practical acoustics required to fulfill the obligations of the municipal noise control officer or of other noise control and abatement agencies. Upon successful completion of the appropriate parts of the course, the trainee will be qualified to perform noise control duties at the level indicated by the certificate rank awarded, as follows:

<u>CERTIFICATE</u>	<u>COURSE</u>
Class 1	Acoustics I and II
Class 2	Acoustics I, II and III
Class 3	Acoustics I, II, III, IV and V

The Ontario Association of Certified Engineering Technicians and Technologists (OACETT) has approved the combined Acoustics I and II Courses as a single credit course for OACETT certification purposes. Consideration of Acoustics III, IV ~~and V~~ as OACETT credit courses is pending.

*SCOPE:**ACOUSTICS I:*

INTRODUCTORY ACOUSTIC THEORY. LAW. HANDLING OF COMPLAINTS. USE OF SIMPLE SOUND LEVEL METER, OCTAVE BAND ANALYSER AND CALIBRATION TECHNIQUES. MEASUREMENT OF TRAFFIC NOISE AND INDUSTRIAL NOISE. PROCEDURES. REVIEW. EXAMINATION.

ACOUSTICS II:

REVIEW OF PREVIOUS WORK. ACOUSTIC THEORY. LAW, E.P.A., BY-LAW. COMPLAINT STATISTICS. INVESTIGATIONS, REPORT WRITING. ANSI, ISO AND OTHER STANDARDS. USE OF 1/3 OCTAVE ANALYSER, TAPE RECORDER, IMPULSE SLM. AUDIO-METRICS, PERSONAL HEARING TEST. MORE FIELD WORK. REVIEW. EXAMINATION.

ACOUSTICS III:

REVIEW OF PREVIOUS WORK. ACOUSTIC THEORY. LAW, STOP ORDERS, CONTROL ORDERS, PROVINCIAL OFFICER'S REPORT, PROSECUTIONS, GRAPHIC ANALYSER, STATISTICAL ANALYSER. VIBRATION ANALYSIS. ADVANCED STATIONARY SOURCE NOISE ANALYSIS. LABORATORY. FIELD WORK. REVIEW. EXAMINATION.

ACOUSTICS IV:

REVIEW OF PREVIOUS WORK. ADVANCED ACOUSTIC THEORY. USE OF STATISTICAL ANALYSER, WESTERN MONITOR, DOSIMETER, REAL TIME ANALYSER. OFF ROAD AND ROADSIDE MEASUREMENTS. LOCATION AND ACOUSTICAL EVALUATION AND LEGAL DOCUMENTATION OF TEST SITES. VISITS TO OTHER MINISTRIES CONCERNED WITH NOISE. LAW. ADVANCED PROCEDURES. SELECTION OF INSTRUMENTATION. REVIEW. EXAMINATION.

PRE-COURSE

FAMILIARIZATION:

Pre-course study material, including a manual, will be provided. When preparing to attend any part of this course, an applicant must complete the pre-course requirements.

PREREQUISITES:

Courses are to be taken in the order designated. Possession of a valid certificate of a lower rank is a prerequisite for all courses Acoustic II through Acoustic IV inclusive, but recognition will be given for prior formal training in acoustics.

PASSING GRADE:

Those trainees who achieve a passing grade will be awarded a certificate of competency in acoustic technology in the rank achieved, valid for three calendar years only. The passing grade for all courses will be 60 per cent.

REGISTRATION FEE:

Upon application, and subject to eligibility and acceptance, for each course, payable to "Training and Certification Section". The fee is:

- | | |
|---|----------|
| 1. Ontario Government and Municipal employees | \$ 20.00 |
| 2. Others | \$150.00 |

COURSE DESCRIPTIONACOUSTIC TECHNOLOGY IN LAND USE PLANNING*PURPOSE:*

The course on Acoustic Technology in Land Use Planning discusses the impact of noise on land use. It is designed for the Noise Control Officer, urban planner and architect.

SCOPE:

The course, which includes a review of Acoustic Technology Certificate Course I through IV, covers the following subjects:

- A. COMMUNITY NOISE SURVEYS
- B. LAND USE CONCEPTS
- C. NOISE MAPS
- D. NOISE CONTOURS
- E. DIGITAL AND STATISTICAL SAMPLING TECHNIQUES
- F. USE OF L_{eq} , L_{90} , L_{dn} , NEF AND OTHER INDICES
- G. FIELD PROJECT
- H. ANALYSIS OF DATA
- I. REVIEW OF LAW, BY-LAW AND PROCEDURES

*PRE-COURSE**FAMILIARIZATION:*

Candidates must review Parts I through IV of the Acoustic Technology Certificate Course.

Pre-course study material, including a manual, will be provided.

PREREQUISITES:

Candidates must have successfully completed Acoustic Technology Certificate Course Part I.

PASSING GRADE:

Candidates achieving a passing grade of 60 per cent will be awarded a certificate denoting successful completion of the course.

REGISTRATION FEE:

Payable to "Training and Certification Section"

- | | |
|---|----------|
| 1. Ontario Government and Municipal Employees | \$ 20.00 |
| 2. Others | \$150.00 |

D E L E T E D

COURSE DESCRIPTION

SEWER AND WATERMAIN DESIGN COURSE

PURPOSE:

This course, developed and conducted jointly with the Ontario Municipal Engineers Association, is intended to broaden the understanding and knowledge of personnel who are engaged in the design of Sewer and Watermain Systems.

SCOPE:

The Course includes presentation and discussion of the following topics:

- A. MANUAL REVIEW
- B. GRAPHS AND CHARTS EXPLANATION
- C. ENGINEERING AGREEMENTS
- D. PROJECT PROCEDURES
- E. MOE APPROVALS
- F. SEWER DESIGN: GENERAL
- G. PROBLEM SOLVING: SEWER DESIGN
- H. SEWER APPURTENANCES
- I. CONSTRUCTION PRACTICES
- J. HOW MAINTENANCE CAN AFFECT DESIGN
- K. PROBLEM SOLVING IN HYDRAULIC ASPECTS OF SEWER DESIGN
- L. WATERMAIN SWABBING
- M. DESIGN OF WATERMAINS AND APPURTENANCES
- N. STRUCTURAL PROBLEM SOLVING IN SEWER DESIGN

PRE-COURSE

FAMILIARIZATION:

Pre-course study material will be provided. Candidates must:

- (a) review the lecture notes and other material mailed out for pre-course study
- (b) answer the pre-course study problems, which will be discussed during the course.

PREREQUISITES:

Candidates for this course should have some basic understanding of sewer and watermain design. Those attending this course should be employed, at least in part, in the design of Sewer and Watermain Systems.

PASSING GRADE:

60%

REGISTRATION FEE:

\$50.00 payable to the Municipal Engineers Association of Ontario.

COURSE DESCRIPTION

SEWER AND WATERMAIN CONSTRUCTION
INSPECTORS COURSE: NO.1

PURPOSE:

This course, developed and conducted jointly with the Ontario Municipal Engineers Association, is intended to broaden the understanding and knowledge of inspectors engaged in supervising the construction of Sewers and Watermains.

SCOPE:

The course includes presentations on and discussions of the following topics:

- A. *ROLE OF THE INSPECTOR*
- B. *RECORDS*
- C. *LAYOUT AND GRADES*
- D. *PIPE MATERIALS*
- E. *SEWER CONSTRUCTION AND TESTING*
- F. *WATERMAIN CONSTRUCTION AND TESTING*
- G. *CONCRETE HANDLING*
- H. *SAFETY PRACTICES AND REGULATIONS*

PRE-COURSE

FAMILIARIZATION:

Pre-course study material will be provided. Personnel attending this course should be familiar with the Regulations in their own area.

PREREQUISITES:

Those attending the course should be employed in the private or public sector where at least part of the job function is supervision of the construction of Sewers and Watermains.

PASSING GRADE:

60%

REGISTRATION FEE:

\$20.00 payable to Municipal Engineers Association of Ontario.

COURSE DESCRIPTION

SEWER AND WATERMAIN CONSTRUCTION
INSPECTORS COURSE: NO.2

PURPOSE:

This course, developed and conducted jointly with the Ontario Municipal Engineers Association, is intended to further broaden the understanding and knowledge of inspectors engaged in supervising the construction of Sewers and Watermains.

SCOPE:

The course includes presentation and discussion of the following topics:

- A. NEW METHODS
- B. BASIC SOILS
- C. PLANT EQUIPMENT
- D. SEWER AND WATERMAIN MATERIALS
- E. WATERMAIN DESIGN
- F. SEWER DESIGN
- G. CONSTRUCTION SAFETY
- H. REINFORCED CONCRETE THEORY
- I. GENERAL CONTRACTING PROCEDURES
- J. BLASTING AND TUNNELING

PRE-COURSE FAMILIARIZATION:

Pre-course study material will be provided. Personnel attending this course should be familiar with the Regulations in their own area.

PREREQUISITES:

Those attending the course should be employed in the private or public sector where at least part of the job function is supervision of the construction of Sewers and Watermains.

PASSING GRADE:

60%

REGISTRATION FEE:

\$20.00 payable to Municipal Engineers Association of Ontario.

TRAINING, CERTIFICATION & SAFETY
CALENDAR 1976-77

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MON	TUES	WED	THURS	FRI
2 HOLIDAY	3	4	5	6
9	10	11	12	13
16	17	18	19	20
23	24	25	26	27
30	31	1	2	3
6 HOLIDAY	7	8	9	10
13	14	15	16	17
20	21	22	23	24
27	28	29	30	1
← SEWER AND WATERMAIN DESIGN →				

TRAINING, CERTIFICATION & SAFETY
 CALENDAR 1976-77

MON	TUES	WED	THURS	FRI
4	5	6	7	8
ACOUSTICS LEVEL I				
11 HOLIDAY	12	13	14	15
18	19	20	21	22
INDUSTRIAL ABATEMENT PART II				
25	26	27	28	29
BASIC SEWAGE TREATMENT				
BASIC GAS CHLORINATION				
1	2	3	4	5
BASIC WATER TREATMENT OPERATION				
8	9	10	11 HOLIDAY	12
15	16	17	18	19
ACTIVATED SLUDGE				
PUMP OPERATION				
22	23	24	25	26
MAINTENANCE GAS FITTERS				
ACOUSTICS LEVEL II				
29	30	1	2	3
SURFACE WATER TREATMENT				

TRAINING, CERTIFICATION & SAFETY CALENDAR 1976-77.

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MON	TUES	WED	THURS	FRI
6	7	8	9	10
←	CONSTRUCTION INSPECTORS NO. 1	→		
	←	BASIC GAS CHLORINATION	→	
13	14	15	16	17
←	ACTIVATED SLUDGE	→		
←	PRIMARY TREATMENT AND DIGESTION	→		
20	21	22	23	24
27	28	29	30	31
←	HOLIDAY	→		
3	4	5	6	7
10	11	12	13	14
←	INDUSTRIAL ABATEMENT PART III	→		
17	18	19	20	21
←	BASIC SEWAGE TREATMENT	→		
	←	BASIC GAS CHLORINATION	→	
24	25	26	27	28
←	ACOUSTICS LEVEL III	→		
31	1	2	3	4
←	BASIC WATER TREATMENT	→		

TRAINING, CERTIFICATION & SAFETY CALENDAR 1977-78

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MON	TUES	WED	THURS	FRI
7	8	9	10	11
←	MAINTENANCE GAS FITTERS	→		
←	ACTIVATED SLUDGE	→		
14	15	16	17	18
←	PUMP OPERATION	→		
←	SURFACE WATER TREATMENT	→		
21	22	23	24	25
←	BASIC GAS CHLORINATION	→		
←	PREVENTIVE MAINTENANCE	→		
28	1	2	3	4
←	ACOUSTICS LEVEL IV	→		
←	PRIMARY TREATMENT AND DIGESTION	→		
7	8	9	10	11
←	SAFETY IN WATER AND WASTEWATER OPERATIONS	→		
←	ACTIVATED SLUDGE	→		
14	15	16	17	18
←	CONSTRUCTION INSPECTORS NO. 2	→		
21	22	23	24	25
←	SURFACE WATER	→		
28	29	30	31	1
←	BASIC SEWAGE TREATMENT	→		

TRAINING, CERTIFICATION & SAFETY
CALENDAR 1977-78

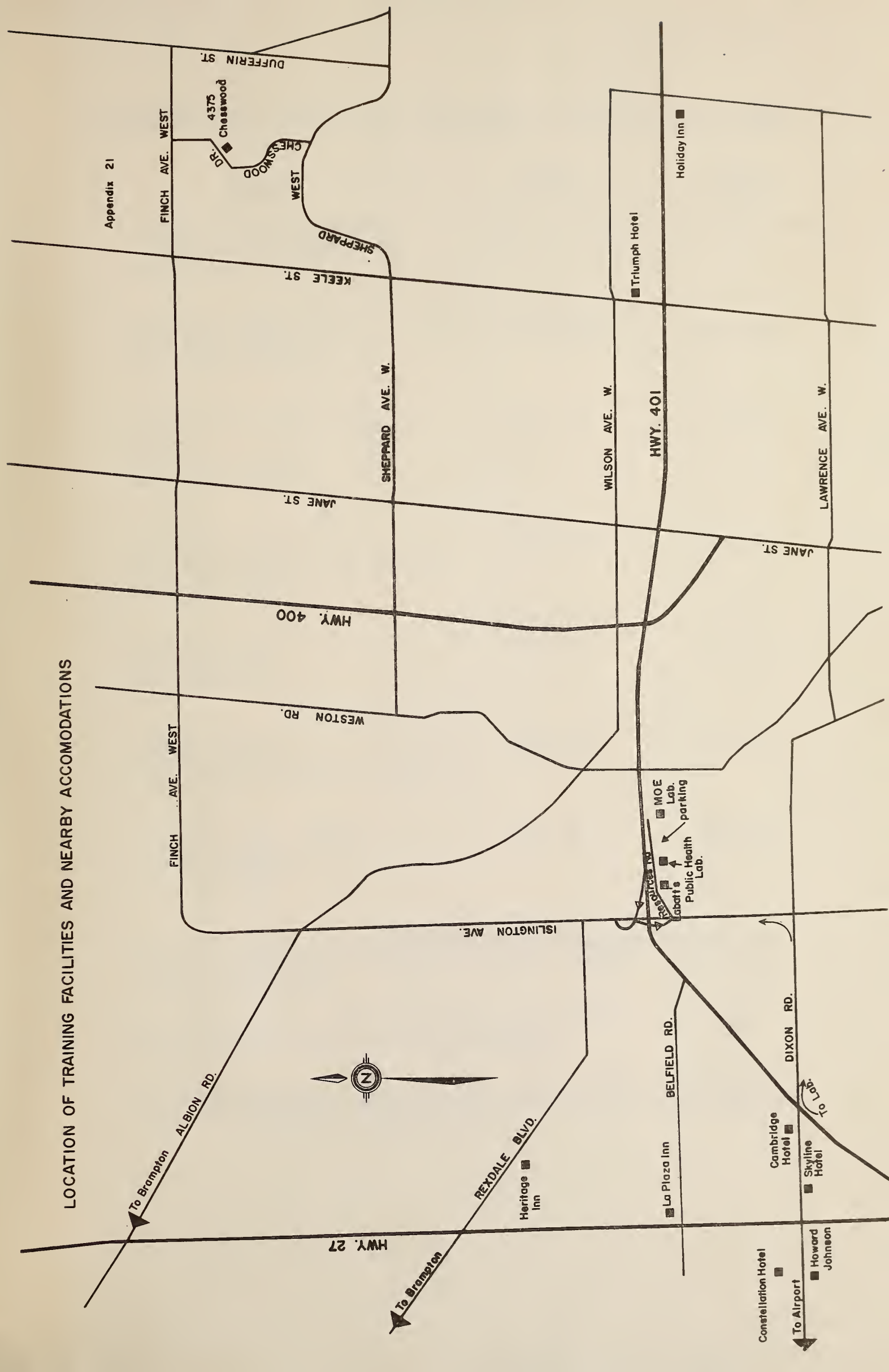
	MON	TUES	WED	THURS	FRI
A P R I L	4	5	6	7	8 HOLIDAY
	11 HOLIDAY	12	13	14	15
	18	19	20	21	22
	← PREVENTIVE MAINTENANCE →				
	← BASIC WATER TREATMENT →				
M A Y	25	26	27	28	29
	← ACOUSTIC TECHNOLOGY - LAND USE PLANNING →				
	← BASIC GAS CHLORINATION →				
	2	3	4	5	6
	9	10	11	12	13
	← INDUSTRIAL ABATEMENT-AIR MANAGEMENT PART I →				
	16	17	18	19	20
	23	24	25	26	27
	30	31	1	2	3

PROGRAM (Capacity)		Dates		Location		Applications to be submitted BEFORE		Remarks
BASIC SEWAGE TREATMENT OPERATION (40)		25-29 Oct. 76		Toronto MOE Lab		15 Aug.		Operators only
		17-21 Jan. 77		Toronto MOE Lab		15 Nov.		
		28 Mar-1 Apr/77		Toronto MOE Lab		15 Jan.		
BASIC WATER TREATMENT OPERATION (40)		1- 5 Nov. 76		Toronto MOE Lab		15 Sept.		Operators only
		31 Jan-4 Feb/77		Toronto MOE Lab		15 Nov.		
		18-22 Apr. 77		Toronto MOE Lab		15 Feb.		
ACTIVATED SLUDGE WORKSHOP (25)		15-19 Nov. 76		Toronto MOE Lab		15 Sept.		Operators only
		13-17 Dec. 76		Toronto MOE Lab		15 Oct.		
		7-11 Feb. 77		Toronto MOE Lab		15 Dec.		
		7-11 Mar. 77		Toronto MOE Lab		15 Jan.		Operators only
BASIC GAS CHLORINATION WORKSHOP (25)		26-29 Oct. 76		Toronto Chesswood Dr.		15 Aug.		
		7-10 Dec. 76		Windsor		15 Oct.		
		18-21 Jan. 77		Toronto Chesswood Dr.		15 Nov.		
		22-25 Feb. 77		Kingston		15 Dec.		

PROGRAM (Capacity)		Dates		Location		Applications to be submitted BEFORE		Remarks	
SURFACE WATER TREATMENT WORKSHOP (25)		29 Nov-3 Dec/76		Toronto MOE Lab		15 Oct.		Operators only	
		14-18 Feb. 77		Toronto MOE Lab		15 Dec.			
		21-25 Mar. 77		Toronto MOE Lab		15 Jan.			
MAINTENANCE GAS FILTERS (20)		22-26 Nov. 76		Toronto Chesswood Dr.		15 Sept.		Operators only	
		7-11 Feb. 77		Toronto Chesswood Dr.		15 Dec.		Operators only	
PRIMARY TREATMENT AND DIGESTION (25)		13-17 Dec. 76		Toronto Chesswood Dr.		15 Oct.		Operators only	
		28 Feb-4 Mar/77		Toronto Chesswood Dr.		15 Dec.		Operators only	
PREVENTIVE MAINTENANCE (25)		21-25 Feb. 77		Toronto Chesswood Dr.		15 Dec.		Operators only	
		18-22 Apr. 77		Toronto Chesswood Dr.		15 Feb.		Operators only	
INDUSTRIAL ABATEMENT - Part I (30)		9-13 May 77		Toronto MOE Lab				MOE only	
INDUSTRIAL ABATEMENT - Part II (30)		18-22 Oct. 76		Toronto MOE Lab		15 Aug.		MOE only	
INDUSTRIAL ABATEMENT - Part III (30)		10-14 Jan. 77		Toronto MOE Lab		15 Nov.		MOE only	
VISIBLE EMISSIONS RECERTIFICATION		To be determined		Toronto		15 Aug.		MOE only	
		To be determined		Toronto		15 Feb.		MOE only	

LOCATION OF TRAINING FACILITIES AND NEARBY ACCOMODATIONS

Appendix 21



ACCOMMODATION AVAILABLE IN THE AREA OF THE MOE LABORATORIES

<u>Hotel</u>	<u>Single Rate</u>	<u>Double Rate</u>
Cambridge Motor Hotel Dixon Rd. & Highway 401 Tel. 249-7671	\$18.00, 21.00	\$23.00, 26.00
Heritage Inn 385 Rexdale Blvd. Tel. 742-5510	\$18.00	\$22.50
Howard Johnson's Airport Hotel 801 Dixon Road Tel. 677-6100	\$24.00	\$28.00
La Plaza Motor Inn 240 Belfield Rd. at Hwy.27 Tel. 241-8513	\$18.00	\$26.00
Skyline Hotel 655 Dixon Rd. Tel. 244-1711	\$29.00	\$35.00
Hotel Triumph 2737 Keele Street at Hwy.401 Tel. 633-2000	\$25.00	\$29.00
Constellation Hotel 900 Dixon Road Tel. 677-1500	\$29.00	\$35.00

The above rates were provided by the management of each hotel as current in spring of 1976, and are subject to change with time.

The guest room rates should be confirmed at the time when reservations are being arranged.

A road map showing the location of the MOE Laboratories and other training facilities, and access to the various local hotels is on Appendix 21.

SEP 03 1976

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Ont. Ministry of the Environment.
Personnel Services Branch. Train..

Information on courses, workshops
and seminars.

MOE/INF/AQUK

1976-1977

DATE	ISSUED TO
SEP 03 1976	P. Baulu O.T.C.
SEP 17 1976	J. RALSTON - 1-4.
SEP 24 1976	T. S. S. - 1-4

MOE/INF/AQUK

Ontario Ministry of the En
Information on
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Environment Ontario



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